



| | | | |
|---|------------------------|--------------------------|-------------------|
| Substitute for form 1449A/P | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | 10/086,043 |
| | | Filing Date | February 28, 2002 |
| | | First Named Inventor | S. Mark Haugland |
| | | Group Art Unit | 2858 |
| | | Examiner Name | |
| Sheet 1 of 1 | Attorney Docket Number | H052722.0029US0 | |

| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|----------------------|----------------------|---|---|
| Exr Initials | U.S. Patent Document | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Number | Kind Code (if known) | | |
| CR | 4,209,747 | | Huchital | 06-1980 |
| CR | 5,963,036 | | Wu et al. | 10-1999 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| FOREIGN PATENT DOCUMENTS | | | | | |
|--------------------------|-------------------------|--------|----------------------|---|---|
| Exr Initials | Foreign Patent Document | | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Country Code | Number | Kind Code (if known) | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | |
|---|---|--|--|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | | |
| CR | <i>New Discovery with Important Implications for LWD Propagation Resistivity Processing and Interpretation</i> , S. Mark Haugland, SPWLA 42 nd Annual Logging Symposium, Powerpoint, pp. 1-38 (June 17-20, 2001) | | |
| | | | |
| | | | |
| | | | |

| | | | |
|--------------------|----------------------------|-----------------|--------|
| Examiner Signature | <i>Charles R. B. Foddy</i> | Date Considered | 9/4/05 |
|--------------------|----------------------------|-----------------|--------|

| | | | |
|---|------|---------------------------------------|--|
| Substitute for form 1449A/PTO | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | |
| | | Filing Date | |
| | | First Named Inventor S. Mark Haugland | |
| | | Group Art Unit | |
| | | Examiner Name | |
| Sheet 1 | of 2 | Attorney Docket Number H052722.0029US | |

370980/10/080743
02/26/02

| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|----------------------|----------------------|---|---|
| Exr Initials | U.S. Patent Document | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Number | Kind Code (if known) | | |
| CR | 3,944,910 | | Rau | 03-1976 |
| CR | 4,185,238 | | Huchital et al. | 01-1980 |
| CR | 4,209,247 | | Urano et al. | 06-1980 |
| CR | 4,209,747 | | Huchital | 06-1980 |
| CR | 4,899,112 | | Clark et al. | 02-1990 |
| CR | 4,968,940 | | Clark et al. | 11-1990 |
| CR | 5,157,605 | | Chandler et al. | 10-1992 |
| CR | 5,594,343 | | Clark et al. | 01-1997 |
| CR | 5,869,968 | | Brooks et al. | 02-1999 |
| CR | 5,881,973 | | Agajanian et al. | 03-1999 |
| CR | 6,060,884 | | Meyer, Jr. et al. | 05-2000 |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-------------------------|--------|----------------------|---|--|----|
| Exr Initials | Foreign Patent Document | | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY | T. |
| | Country Code | Number | Kind Code (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | | |
|---|---|--|--|----------------|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | | | T ₁ |
| CR | Dielectric-Independent 2-MHz, Propagation Resistivities, Peter T. Wu, John R. Lovell, Brian Clark, Stephan D. Bonner and Jacques R. Tabanou, Society of Petroleum Engineers, Inc. SPE 56448, 19 pages (© 1999) | | | |
| CR | New Developments In 2-MHz, Electromagnetic Wave Resistivity Measurements, S. Gianzero, G. A. Merchant, M. Haugland and R. Strickland, SPWLA 35 th Annual Logging Symposium, pp. 1-25 (June 19-22, 1994) | | | |
| CR | Vertical Deconvolution of 2 MHz, Propagation Tools, Richard Rosthal, David Allen and Stephen Bonner, SPWLA 34th Annual Logging Symposium, (June 13-16, 1993) | | | |
| CR | Geometric Factor and Adaptive Deconvolution of MWD-PWR Tools, Q. Zhou, D. J. Hilliker and D. Norwood, The Log Analyst, pp. 390-398 (July-August, 1992) | | | |
| CR | Reconciling Differences in Depth of Investigation Between 2-MHz, Phase Shift and Attenuation Resistivity Measurements, Tarek Habashy and Barbara Anderson, SPWLA 32 nd Annual Logging Symposium, pp. 1-20 (June 16-19, 1991) | | | |
| CR | Complex Variables and Applications 5 th Ed., Ruel V. Churchill and James Ward Brown, 2 cover pages and pp. 48-50 (©1990) | | | |
| CR | Waves and Fields In Inhomogeneous Media, Transients, Weng Cho Chew, 2 cover pages, pp. 244-246, 360-365 and 485-487 (©1990) | | | |

Carl R. Pitts Rediger 9/6/05

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

Application Number

Filing Date

First Named Inventor

S. Mark Haugland

Group Art Unit

Examiner Name

Attorney Docket Number

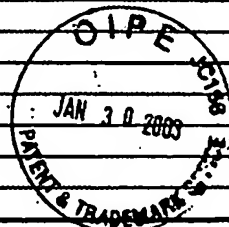
H052722.0029US

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | T ₁ |
|-----------------|---|----------------|
| CR | <i>Algorithm 624: Triangulation and Interpolation at Arbitrarily Distributed Points In the Plane</i> , Robert J. Renka, ACM Transactions On Mathematical Software, Vol. 10, pp. 440-442 (December 4, 1984) | |
| CR | <i>A Triangle-Based C¹ Interpolation Method</i> , R. J. Renka and A. K. Cline, Rocky Mountain Journal of Mathematics, Vol. 14, No. 1, pp. 223-237 (Winter 1984) | |
| CR | <i>More On the Laterlog Device</i> , J. H. Moran and R. E. Chemali, Geophysical Prospecting 27, pp. 902-930 (1979) | |
| CR | <i>Geophysics, A Journal of General and Applied Geophysics</i> , Published by The Society of Exploration Geophysicists, Vol. XXVII, No. 6, Part 1, cover page and pp. 828-858 (December 1962) | |
| CR | <i>Effect of Tool Eccentricity on Some Electrical Well-Logging Tools</i> , John R. Lovell and Weng Cho Chew, IEEE Transactions on Geoscience and Remote Sensing, Vol. 28, No. 1, pp. 127-136 (January 1990) | |
| CR | BADEA, EUGENE A. AND EVERETT, MARK E., <i>3-D Finite Element Analysis of Induction Logging</i> , 4 pages (date unknown) | |
| CR | <i>Fundamental Analysis of Remote-Field Eddy-Current Effect</i> , IEEE Transactions on Magnetics, Vol. 32, No. 4, pp. 3195-3211 (July 1996) | |
| CR | <i>Numerical Recipes</i> , The Art of Scientific Computing, ©Cambridge Press 1986 and © Numerical Recipes Software, 2 cover pages, pp. 52-65 and 520-527 (1986) | |
| CR | <i>NAG Fortran Library Manual Mark 18</i> , ©The Numerical Algorithms Group Limited, Vol. 4, D04-4E04L cover pages and pp. E04.1-E04.16 and 1-6 (September 1997) | |
| CR | <i>New Discovery with Important Implications for LWD Propagation Resistivity Processing and Interpretation</i> , S. Mark Haugland, SPWLA 42 nd Annual Logging Symposium, pp. 1-14 (June 17-20, 2001) | |

| | | | |
|-----------------------|---------------------------|--------------------|--------|
| Examiner Signature | <i>Colin M. Rodriguez</i> | Date Considered | 4/6/05 |
|-----------------------|---------------------------|--------------------|--------|

| | | | |
|---|------------------------|--------------------------|-------------------|
| Substitute for form 1449A/PTO | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | 10/086,043 |
| | | Filing Date | February 28, 2002 |
| | | First Named Inventor | S. Mark Haugland |
| | | Group Art Unit | 2858 |
| | | Examiner Name | |
| Sheet 1 of 1 | Attorney Docket Number | H052722.0029US0 | |



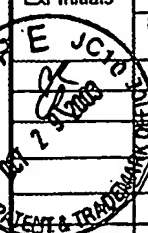
| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|----------------------|----------------------|---|---|
| Exr Initials | U.S. Patent Document | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Number | Kind Code (if known) | | |
| CR | 5,867,806 | | Strickland et al. | 02-1999 |
| CR | 5,892,361 | | Meyer Jr. et al. | 04-1999 |
| CR | 5,966,013 | | Hagiwara | 10-1999 |
| CR | 6,211,678 | B1 | Hagiwara | 04-2001 |
| CR | 6,216,090 | B1 | Hagiwara | 04-2001 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-------------------------|--------|----------------------|---|--|----------------|
| Exr Initials | Foreign Patent Document | | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY | T ₁ |
| | Country Code | Number | Kind Code (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | |
|---|---|----------------|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | T ₁ |
| | | |
| | | |
| | | |
| | | |


| | | | |
|--------------------|---------------------------|-----------------|--------|
| Examiner Signature | <i>Carol A. Ols Reddy</i> | Date Considered | 9/6/05 |
|--------------------|---------------------------|-----------------|--------|

| | | | | | |
|--|---------------|--|--|--------------------------|-------------------|
| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | | | Complete if Known | |
| | | | | Application Number | 10/086,043 |
| | | | | Filing Date | February 28, 2002 |
| | | | | First Name of Inventor | S. Mark Haugland |
| | | | | Group Art Unit | 2858 |
| Sheet 1 of 1 | Examiner Name | | | | |
| | | | | Attorney Docket Number | H052722.0029US0 |

| U.S. PATENT DOCUMENTS | | | | |
|---|----------------------|----------------------|---|--|
| Exr Initials | U.S. Patent Document | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Number | Kind Code (if known) | | |
|  | 4,209,747 | | Huchital | 06-1980 |
| | 5,963,036 | | Wu et al. | 10-1999 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-------------------------|--------|----------------------|---|--|----------------|
| Exr Initials | Foreign Patent Document | | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY | T ₁ |
| | Country Code | Number | Kind Code (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | |
|---|---|----------------|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | T ₁ |
| SC | <i>New Discovery with Important Implications for LWD Propagation Resistivity Processing and Interpretation</i> , S. Mark Haugland, SPWLA 42 nd Annual Logging Symposium, Powerpoint, pp. 1-38 (June 17-20, 2001) | |
| | | |
| | | |
| | | |

| | | | |
|--------------------|---|-----------------|--------|
| Examiner Signature |  | Date Considered | 9/6/05 |
|--------------------|---|-----------------|--------|

10086043

| | | | |
|---|------------------------|----------------------|------------------------|
| Substitute for form 1449A/PTO | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | |
| | | Filing Date | |
| | | First Named Inventor | S. Mark Haugland |
| | | Group Art Unit | |
| | | Examiner Name | |
| Sheet 1 of 2 | Attorney Docket Number | H052722.0029US | Technology Center 2100 |

| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|----------------------|----------------------|---|---|
| Exr Initials | U.S. Patent Document | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY |
| | Number | Kind Code (if known) | | |
| CR | 3,944,910 | | Rau | 03-1976 |
| CR | 4,185,238 | | Huchital et al. | 01-1980 |
| CR | 4,209,247 | | Urano et al. | 06-1980 |
| CR | 4,209,747 | | Huchital | 06-1980 |
| CR | 4,899,112 | | Clark et al. | 02-1990 |
| CR | 4,968,940 | | Clark et al. | 11-1990 |
| CR | 5,157,605 | | Chandler et al. | 10-1992 |
| CR | 5,594,343 | | Clark et al. | 01-1997 |
| CR | 5,869,968 | | Brooks et al. | 02-1999 |
| CR | 5,881,973 | | Agajanian et al. | 03-1999 |
| CR | 6,060,884 | | Meyer, Jr. et al. | 05-2000 |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-------------------------|--------|----------------------|---|---|----------------|
| Exr Initials | Foreign Patent Document | | | Name of Inventor or Applicant of Cited Document | Date of Publication of Cited Document MM-YYYY | T ₁ |
| | Country Code | Number | Kind Code (if known) | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | | T ₁ |
|---|---|--|--|----------------|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | | | |
| CR | <i>Dielectric-Independent 2-MHz Propagation Resistivities</i> , Peter T. Wu, John R. Lovell, Brian Clark, Stephan D. Bonner and Jacques R. Tabanou, Society of Petroleum Engineers, Inc. SPE 56448, 19 pages (© 1999) | | | |
| CR | <i>New Developments In 2-MHz Electromagnetic Wave Resistivity Measurements</i> , S. Gianzero, G. A. Merchant, M. Haugland and R. Strickland, SPWLA 35 th Annual Logging Symposium, pp. 1-25 (June 19-22, 1994) | | | |
| CR | <i>Vertical Deconvolution of 2 MHz Propagation Tools</i> , Richard Rosthal, David Allen and Stephen Bonner, SPWLA 34th Annual Logging Symposium, (June 13-16, 1993) | | | |
| CR | <i>Geometric Factor and Adaptive Deconvolution of MWD-PWR Tools</i> , Q. Zhou, D. J. Hilliker and D. Norwood, The Log Analyst, pp. 390-398 (July-August, 1992) | | | |
| CR | <i>Reconciling Differences in Depth of Investigation Between 2-MHz Phase Shift and Attenuation Resistivity Measurements</i> , Tarek Habashy and Barbara Anderson, SPWLA 32 nd Annual Logging Symposium, pp. 1-20 (June 16-19, 1991) | | | |
| CR | <i>Complex Variables and Applications</i> 5 th Ed., Ruel V. Churchill and James Ward Brown, 2 cover pages and pp. 48-50 (©1990) | | | |
| CR | <i>Waves and Fields In Inhomogeneous Media</i> , Transients, Weng Cho Chew, 2 cover pages, pp. 244-246, 360-365 and 485-487 (©1990) | | | |

Charles P. Ortiz Rodriguez 9/6/05

10 086 043

| | | | |
|---|------------------------|----------------------|------------------|
| Substitute for form 1449A/PTO | | Complete if Known | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | Application Number | |
| | | Filing Date | |
| | | First Named Inventor | S. Mark Haugland |
| | | Group Art Unit | |
| | | Examiner Name | |
| Sheet 2 of 2 | Attorney Docket Number | H052722.0029US | FEB 11 2004 |

Technology Center 2100

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | |
|---|---|----------------|
| Exr Initials | Include Name of first Author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue number(s), page(s), date (in parentheses). If a book, also include publisher and city and/or county where published. | T ₁ |
| CR | <i>Algorithm 624: Triangulation and Interpolation at Arbitrarily Distributed Points In the Plane</i> , Robert J. Renka, ACM Transactions On Mathematical Software, Vol. 10, pp. 440-442 (December 4, 1984) | |
| CR | <i>A Triangle-Based C' Interpolation Method</i> , R. J. Renka and A. K. Cline, Rocky Mountain Journal of Mathematics, Vol. 14, No. 1, pp. 223-237 (Winter 1984) | |
| CR | <i>More On the Laterlog Device</i> , J. H. Moran and R. E. Chemali, Geophysical Prospecting 27, pp. 902-930 (1979) | |
| CR | <i>Geophysics, A Journal of General and Applied Geophysics</i> , Published by The Society of Exploration Geophysicists, Vol. XXVII, No. 6, Part 1, cover page and pp. 828-858 (December 1962) | |
| CR | <i>Effect of Tool Eccentricity on Some Electrical Well-Logging Tools</i> , John R. Lovell and Weng Cho Chew, IEEE Transactions on Geoscience and Remote Sensing, Vol. 28, No. 1, pp. 127-136 (January 1990) | |
| CR | BADEA, EUGENE A. AND EVERETT, MARK E., <i>3-D Finite Element Analysis of Induction Logging</i> , 4 pages (date unknown) | |
| CR | <i>Fundamental Analysis of Remote-Field Eddy-Current Effect</i> , IEEE Transactions on Magnetism, Vol. 32, No. 4, pp. 3195-3211 (July 1996) | |
| CR | <i>Numerical Recipes</i> , The Art of Scientific Computing, ©Cambridge Press 1986 and © Numerical Recipes Software, 2 cover pages, pp. 52-65 and 520-527 (1986) | |
| CR | <i>NAG Fortran Library Manual Mark 18</i> , ©The Numerical Algorithms Group Limited, Vol. 4, D04-4E04L cover pages and pp. E04.1-E04.16 and 1-6 (September 1997) | |
| CR | <i>New Discovery with Important Implications for LWD Propagation Resistivity Processing and Interpretation</i> , S. Mark Haugland, SPWLA 42 nd Annual Logging Symposium, pp. 1-14 (June 17-20, 2001) | |

| | | | |
|-----------------------|----------------------------|--------------------|--------|
| Examiner Signature | <i>Carlos L. Rodriguez</i> | Date Considered | 9/6/05 |
|-----------------------|----------------------------|--------------------|--------|